

Title (en)

Method of regulating phosphorylation of sr protein and antiviral agents comprising sr protein activity regulator as the active ingredient

Title (de)

Verfahren zur Regulierung der Phosphorylierung von SR-Proteinen und Antivirale Wirkstoffen mit einem SR-Proteinaktivitätsregler als Wirkstoff

Title (fr)

Procédé de régulation de la phosphorylation de la protéine SR et agents antiviraux comprenant un régulateur de l'activité de la protéine SR comme principe actif

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Application

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Abstract (en)

The present invention is related to an aniline derivative represented by the following formula (I): wherein, R 1 , R 2 , R 3 , R 4 , Q and W are defined elsewhere. A typical compound of the aniline derivatives of invention is depicted in the figure. The aniline derivatives of invention have antiviral activity

IPC 8 full level

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Citation (applicant)

- US 5142047 A 19920825 - SUMMERTON JAMES [US], et al
- US 5185444 A 19930209 - SUMMERTON JAMES E [US], et al
- PROC NATL ACAD SCI USA, vol. 86, no. 21, pages 8333 - 7
- ANTIMICROB AGENTS CHEMOTHER., vol. 39, no. 7, July 1995 (1995-07-01), pages 1559 - 64
- BIOCHEM. BIOPHYS. RES. COMMUN., vol. 242, pages 357 - 364
- MECH. DEV., vol. 99, pages 51 - 64
- J. BIOL. CHEM., vol. 277, pages 44220 - 44228
- J. BIOL. CHEM., vol. 276, pages 32247 - 32256
- J. CELL. BIOL., vol. 115, 1991, pages 587 - 596
- GENES & DEV., vol. 11, 1997, pages 334 - 344
- BIOCHEM. CELL BIOL., vol. 77, 1999, pages 277 - 291
- NATURE, vol. 393, pages 185 - 187
- EMBO REP, vol. 3, pages 1088 - 1093
- ZAHLER, A. ET AL.: "SR proteins: a conserved family of pre-mRNA splicing factors", GENES DEV., vol. 6, 1992, pages 837 - 847
- GE, H. ET AL., CELL, vol. 66, 1991, pages 373 - 382
- FU, X.D.; MANIATIS, T., SCIENCE, vol. 256, 1992, pages 535 - 538
- SCREATON, G. R. ET AL., EMBO J., vol. 14, 1995, pages 4336 - 4349
- LEJEUNE, F. ET AL., J. BIOL. CHEM., vol. 276, 2001, pages 7850 - 7858
- POPIELARZ, M ET AL., J. BIOL. CHEM., vol. 270, 1995, pages 17830 - 17835
- CAVALOC, Y. ET AL., EMBO J., vol. 13, 1994, pages 2639 - 2649
- DU, K.; TAUB, R., GENE, vol. 204, no. 1-2, 1997, pages 243 - 249
- SCREATON, G.R. ET AL., EMBO J., vol. 14, 1995, pages 4336 - 4349
- SORET, J ET AL., MOL. CELL. BIOL., vol. 18, 1998, pages 4924 - 4934
- ZAHLER, A.M. ET AL., GENES DEV., vol. 6, 1992, pages 837 - 847
- BARNARD, D.C.; PATTON, J.G., MOL. CELL. BIOL., vol. 20, 2000, pages 3049 - 3057
- ZAHLER, A.M. ET AL., MOL. CELL. BIOL., vol. 13, 1993, pages 4023 - 4028
- CHAUDHARY, N. ET AL., PROC. NATL. ACAD. SCI. U.S.A., vol. 88, 1991, pages 8189 - 8193
- MUMBY, M.C.; WALTER, G., PHYSIOL. REV., vol. 73, 1993, pages 673 - 680
- LECHWARD, K.; AWOTUNDE, O. S.; SWIATEK, W.; MUSZYNSKA, G., ACTA BIOCHIM. POL., vol. 48, 2001, pages 921 - 933
- COHEN, P.: "The structure and regulation of protein phosphatases", ANNU. REV. BIOCHEM., vol. 58, 1989, pages 453 - 508, XP002943379, DOI: doi:10.1146/annurev.bi.58.070189.002321
- JANSSENS, V.; GORIS, J., BIOCHEM. J., vol. 353, 2001, pages 417 - 39
- NATURE, vol. 369, 1994, pages 678 - 682
- BIOCHEM. BIOPHYS. RES. COMMUN., vol. 242, 1998, pages 357 - 364
- WANG, H.Y. ET AL., J. CELL. BIOL., vol. 140, 1998, pages 737 - 750
- NIKOLAKAKI, E. ET AL., J. BIOL. CHEM., vol. 276, 2001, pages 40175 - 40182
- PAPOUTSOPOULOU, S. ET AL., NUCLEIC ACIDS RES., vol. 27, 1999, pages 2972 - 2980
- WANG, H.Y. ET AL., GENOMICS, vol. 57, 1999, pages 310 - 315
- GUI, J.F. ET AL., NATURE, vol. 369, 1994, pages 678 - 682
- WANG, H.Y. ET AL., J. CELL BIOL., vol. 140, 1998, pages 737 - 750
- KUROYANAGI, N. ET AL., BIOCHEM. BIOPHYS. RES. COMMUN., vol. 242, 1998, pages 357 - 364
- BEDFORD, M.T. ET AL., EMBO J., vol. 16, 1997, pages 2376 - 2383
- SUMMERTON JE., ANN NY ACAD SCI, vol. 1002, 2003, pages 189

- SUMMERTON: "Discoveries in Antisense Nucleic Acids", 1989, THE PORTFOLIO PUBLISHING CO., pages: 71 - 80
- SUMMERTON; WELLER, ANTISENSE NUC. ACID DRUG DEV., vol. 7, 1997, pages 187
- EXPERT-BEZAN, SUREAU, A. ET AL., J. BIOL. CHEM., vol. 279, 2004, pages 38249 - 38259
- ZAHLER, A.M. ET AL., J. BIOL. CHEM., vol. 279, 2004, pages 10077 - 10084
- MARCHAND, V ET AL., J. MOL. BIOL., vol. 323, 2002, pages 629 - 652
- BUVOLI, M. ET AL., EMBO J., vol. 9, 1990, pages 1229 - 1235
- BIAMONTI, G. ET AL., J. MOL. BIOL., vol. 207, 1989, pages 491 - 503
- BUVOLI, M. ET AL., NUCLEIC ACIDS RES., vol. 16, 1988, pages 3751 - 3770
- MICHAEL, W.M ET AL., CELL, vol. 83, 1995, pages 415 - 422
- KOZU, T. ET AL., GENOMICS, vol. 25, 1995, pages 365 - 371
- BIAMONTI, G. ET AL., NUCLEIC ACIDS RES., vol. 22, 1994, pages 1996 - 2002
- BURD, C.G. ET AL., PROC. NATL. ACAD. SCI. U.S.A., vol. 86, 1989, pages 9788 - 9792
- KUMAR, A. ET AL., J. BIOL. CHEM., vol. 261, 1986, pages 11266 - 11273
- ALTSCHUL, S. F. ET AL., J. MOL. BIOL., vol. 215, 1990, pages 403 - 410
- ALTSCHUL, S.F ET AL., NATURE GENET, vol. 3, 1993, pages 266 - 272
- MADDEN, T.L. ET AL., METH. ENZYMOL., vol. 266, 1996, pages 131 - 141
- ALTSCHUL, S.F. ET AL., NUCLEIC ACIDS RES., vol. 25, 1997, pages 3389 - 3402
- ZHANG, J.; MADDEN, T.L., GENOME RES., vol. 7, 1997, pages 649 - 656
- TATIANA A ET AL., FEMS MICROBIOL LETT., vol. 174, 1999, pages 247 - 250
- A.T. NATARAJAN ET AL., MUTATION RES., vol. 37, 1976, pages 83 - 90
- ADACHI, A. ET AL., J. VIROL., vol. 59, 1986, pages 284 - 289
- DR. ADRIAN KRAINER; HANAMURA, A. ET AL., RNA, vol. 4, 1998, pages 430 - 444
- KOJIMA, T. ET AL., J. BIOL. CHEM., vol. 276, 2001, pages 32247 - 56
- YAMAMOTO, N. ET AL., BIOCHEM BIOPHYS RES COMMUN, vol. 318, 2004, pages 719 - 725

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